Pending Claims

The following Listing of Claims contains the claims that currently are pending in the application.

Listing of Claims:

Claim 1 (original): A method of enhancing text-like edges in an image of pixels, comprising the steps of:

segmenting pixels in a block of image pixels into first and second pixel classes; and

edge enhancing the pixel block in response to a determination that the pixel block likely contains at least one text-like edge based on a measure of distance separating intensity values respectively representing intensity distributions of the first and second classes and based on measures of peakedness of intensity histograms computed for both the first and second pixel classes.

Claim 2 (original): The method of claim 1, wherein segmenting pixels comprising classifying pixels in the block into light and dark pixel classes based on intensities of the pixels in the blocks.

Claim 3 (original): The method of claim 2, wherein pixels are classified based on luminance values of the pixels.

Claim 4 (original): The method of claim 1, wherein the distance measure corresponds to a measure of distance between first and second mean intensity values computed for the first and second pixel classes, respectively.

Claim 5 (original): The method of claim 4, wherein the first and second mean intensity values correspond to centroids of the first and second pixel classes, respectively.

Claim 6 (original): The method of claim 4, wherein the determination that the pixel block likely contains at least one text-like edge is based on a comparison between the measure of distance between the first and second mean intensity values and a threshold.

Claim 7 (original): The method of claim 6, wherein the step of edge enhancing the pixel block is omitted in response to a determination that the measure of distance between the first and second mean intensity values is less than the threshold.

Claim 8 (original): The method of claim 1, wherein the determination that the pixel block likely contains at least one text-like edge is based on comparisons between the peakedness measures and respective thresholds.

Claim 9 (original): The method of claim 8, wherein the peakedness measures correspond to the kurtosis of intensity histograms computed for both the first and second pixel classes.

Claim 10 (original): The method of claim 8, wherein the step of edge enhancing the pixel block is omitted in response to a determination that the peakedness measures of one or both of the first and second pixel classes are below respective thresholds.

Claim 11 (original): The method of claim 1, further comprising applying a noise filter to the image before pixels are segmented into the first and second pixel classes.

Claim 12 (original): The method of claim 11, wherein the noise filter applied to the image is an impulse noise filter.

Claim 13 (original): The method of claim 11, further comprising applying a Gaussian smoothing filter to the image before pixels are segmented into the first and second pixel classes.

Claim 14 (original): The method of claim 1, wherein the step of edge enhancing comprises the step of shifting intensity values of intermediate pixels having intensity values

between first and second median intensity values computed for the first and second pixel classes, respectively.

Claim 15 (original): The method of claim 14, wherein the intensity value of any given intermediate pixel is shifted toward the median intensity value of the pixel class into which the given intermediate pixel was segmented.

Claim 16 (original): The method of claim 14, wherein intermediate pixel intensity values are shifted without changing the first and second median intensity values for the first and second pixel classes.

Claim 17 (original): The method of claim 16, wherein the intensity value of any given intermediate pixel is shifted by reducing its distance from the median intensity value of the pixel class into which the given intermediate pixel was segmented by a fixed ratio.

Claim 18 (original): The method of claim 14, wherein the intensity values of non-intermediate pixels in the block are unchanged by the intensity-value-shifting step.

Claim 19 (original): The method of claim 1, further comprising compressing the image after the edge enhancing step has been applied to the image.

Claim 20 (original): The method of claim 19, wherein the image is compressed in accordance with a mixed raster content image compression format.

Claim 21 (original): A system of enhancing text-like edges in an image of pixels, comprising an image enhancement engine operable to:

segment pixels in a block of image pixels into first and second pixel classes; and

edge enhance the pixel block in response to a determination that the pixel block likely contains at least one text-like edge based on a measure of distance separating intensity values respectively representing intensity distributions of the first and second classes and based on

measures of peakedness of intensity histograms computed for both the first and second pixel classes.

Claim 22 (original): The system of claim 21, wherein the image enhancement engine is operable to segment pixels by classifying pixels in the block into light and dark pixel classes based on intensities of the pixels in the blocks.

Claim 23 (original): The system of claim 21, wherein the distance measure corresponds to a measure of distance between first and second median intensity values computed for the first and second pixel classes, respectively.

Claim 24 (original): The system of claim 21, wherein the determination that the pixel block likely contains at least one text-like edge is based on comparisons between the peakedness measures and respective thresholds.

Claim 25 (original): The system of claim 21, wherein the image enhancement engine is operable to apply a noise filter to the image before pixels are segmented into the first and second pixel classes.

Claim 26 (original): The system of claim 21, wherein the image enhancement engine is operable to edge enhance the pixel block by shifting intensity values of intermediate pixels having intensity values between first and second median intensity values computed for the first and second pixel classes, respectively.